

OF INTEREST TO MINER, PROSPECTOR AND STUDENT.

A series of articles dealing in a practical manner with subjects of interest to the miner, prospector and student who already has attained elementary knowledge of field work and seeks information which may be applied in productive effort, will be published each week in the Mining Section of the Sunday Review. Today's issue contains the following installment.

(By Wm. C. Lieberknecht)

ASSAYING GOLD-BEARING CYANIDE SOLUTIONS.

The method here described has been used at the plant of the St. John del Rey Company, at Morro Velho, Brazil, and has proved satisfactory. It is operated by native assistants without any difficulty and yields accurate results which have been carefully checked against the evaporation method. The method is based on the precipitation of gold by means of zinc shavings, or rather by a zinc-lead couple, from the boiling solution, in the presence of considerable quantities of silver and lead salt. Sufficient silver is introduced to yield with the gold a suitable parting alloy. The presence of lead salts causes the formation of a zinc-lead couple which facilitates the complete liberation of the metallic gold from the solution and yields a bulky precipitate of lead and precious metals which settles easily and thus insures the ready and complete carrying down of the precipitated gold.

The stock solutions consist of a silver solution containing one grain of silver for each 10 cc. Thirty-six gms. of silver nitrate crystals are dissolved in water, sodium cyanide added in small quantities until the precipitate which first forms is redissolved, and the solution then diluted to 2½ litres. The sodium cyanide solution is a 10% mixture, 250 to 260 grams of sodium cyanide being dissolved in water and diluted to 2½ litres. Sodium plumbite solution contains 65 grams of lead acetate dissolved in water with sodium hydrate solution added until the precipitate first formed just redissolves, and the solution diluted to 2½ litres. This solution is preferred to the simple acetate solution usually employed, since it insures the alkalinity of the liquid and the consequent absence of free hydrocyanic acid which might otherwise tend to carry back some gold into the solution.

The procedure is to take one pound, or 7000 grains, or 453.6 cc. of the solution for assay; this volume is poured into a flask of 1½ litres capacity and the silver solution added. For rich solution, 15 cc. of the silver solution is used, and for the poorer solution and for wash waters only 5 cc. Next, 10 cc. of the sodium cyanide solution is added, then 5 cc. of the plumbite solution, and the mixture shaken. Then, 20 grams of zinc shavings are placed in the solution and the contents of the flask gently boiled for half an hour and then filtered at once through a 9-in. filter paper, the clear filtrate being rejected. To the flask containing the solution and shavings, little water is added, about 20 cc. only just so much being required as will prevent the cracking of the flask by the drying and heat produced on the subsequent addition of the acid, then 70 cc. of commercial hydrochloric acid. After the complete solution of the zinc contents of the flask are poured on the filter, flask and filter being subsequently well washed with water.

The wet filter is transferred to an assay crucible, dried slowly in the furnace and carbonized at moderate heat. The crucible is withdrawn from the

fire and a flux is then added, consisting of this mixture:

Flux for Melting the Precipitate.

Red lead 12½ grams
Borax 22½ grams
Sodium carbonate 12½ grams
Sodium chloride 2 grams
Flour 2 grams
Powdered glass 2 grams
Potassium nitrate 2 grams

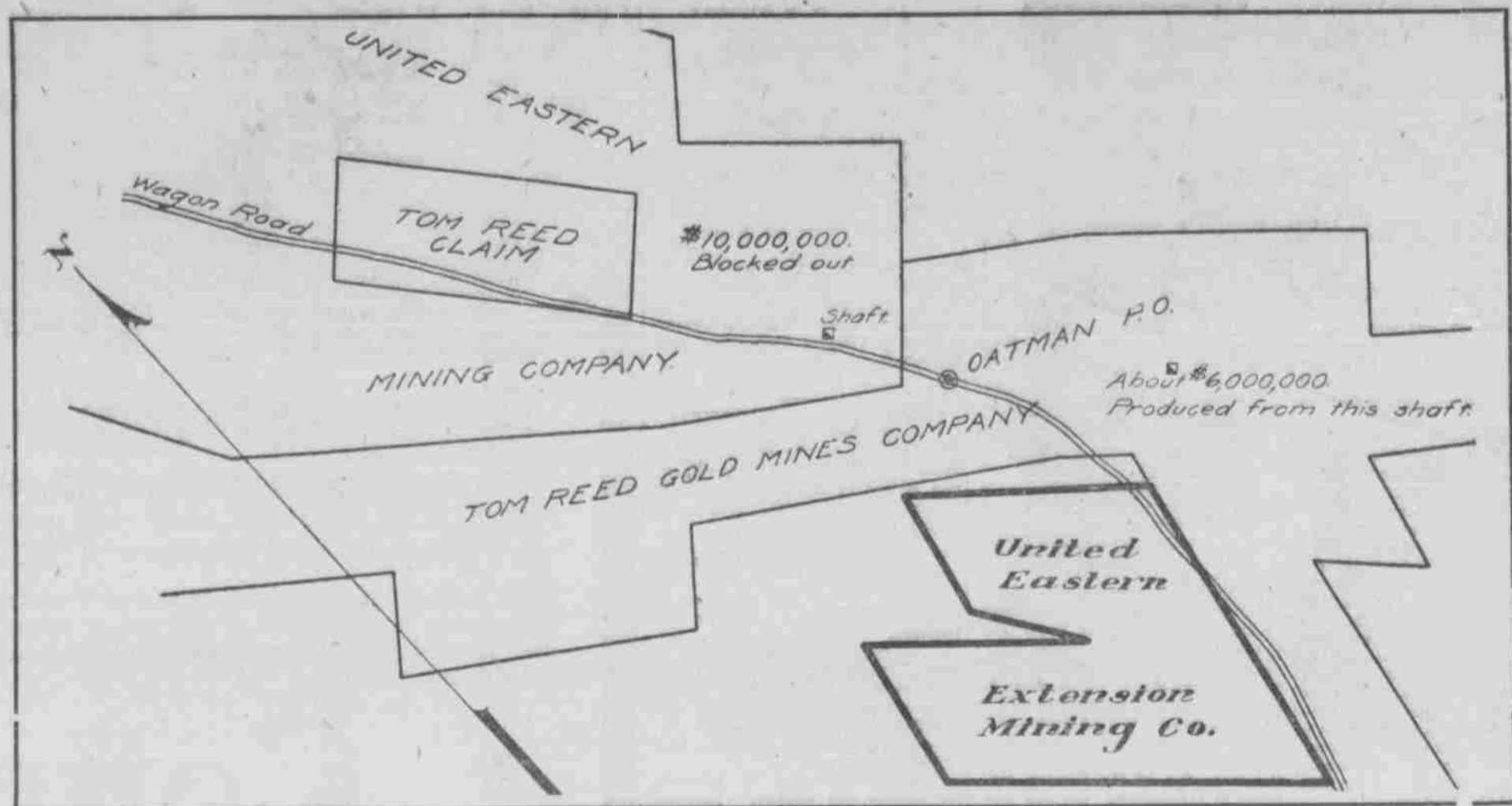
The crucible is then returned to the furnace and the charge run down in the usual manner, from 20 to 30 minutes being required to complete the fusion, after which the contents of the crucible are poured into a conical mold, the metallic button detached when the mass has cooled, and cupelled in a small magnesite cupel, the button being parted directly in the usual manner.

SIMPLE ASSAY FOR PLATINUM.

Platinum is now one of the most valuable of commercial metals, and it no doubt occurs in many ores where its presence is unsuspected. Even in the heart of Germany a valuable deposit was overlooked for years simply because no one took the trouble to make a test for it. In ordinary assay manipulations considerable amounts of platinum and palladium may escape detection. In new mines especially it is well to make an occasional test for these metals. At the Boss mine, Good Springs, Nevada, the following method has been found satisfactory for mine samples.

The assay charge is made up in the usual way, the only precaution being that the charge must contain silver up to about 15 times the weight of the platinum and palladium. The fusion is made at a rather high heat and the cupelling temperature must be higher than that which would produce "flowering." The button is parted first in ordinary dilute nitric acid, and when the parting is apparently finished 5 cc. of concentrated nitric acid and boiled ten minutes. The solution is poured into a casserole, the residue, gold, is washed in one ten nitric acid and the washings added to the casserole. The gold assay is completed in the usual way. The silver in the solution is precipitated with a supersaturated solution of sodium chloride, filtered first with a wash, then refiltered without a wash. The filtrate is neutralized with ammonium hydrate in slight excess and brought to a boil. Formic acid is then added until the solution becomes distinctly acid, and boiled briskly for 20 or 30 minutes. If the platinum content is high, 10 or 15 cc. of alcohol is added after the formic acid. After boiling the precipitated metals are filtered out without washing, the filter paper dried and ignited, and the residue wrapped in lead foil and cupelled, the cupelled button being left in the muff for ten minutes and the heat increased. The resulting button is weighed and recorded as platinum, no further parting being necessary for ordinary purposes. Silver is easily determined in the usual way by difference.

OATMAN THE GREAT GOLD CAMP



Facts About Oatman

When George Long and Jack McIver, promoters of the United Eastern, encountered the ore body of their now famous mine, the mining world sat up and took notice. It was the official introduction, on a large scale, of the now, largest gold camp in the country—Oatman.

The Tom-Reed, Gold-Road mining District dates back into the sixties when some rich ore was taken from several properties. This mining, however, soon dwindled and it was not until Ed Hilly, in 1901, relocated what is now the Tom-Reed that anything was known of the District.

It was years before action could be secured on the Tom-Reed. After many years of troubles the Tom-Reed was placed on a paying basis. It has been and promises to continue to be one of the big producers of the west. With the opening of the Ten Million Dollar ore body, above the 565 level in the United Eastern, the extent of the camp leaked to the outside world and interest in its properties grew apace.

Today the District extends for a distance of fifteen by five miles. All of the area, within those bounds, is mineralized. Some excellent showings have been made at widely diversified points. Geologists predict that it will be the Rand of America. The amount of capital which is now being poured into the camp, for the development of various properties, is astounding and new strikes are a commonplace occurrence.

Fortunes have already been made in this virgin field. The remarkable feature of it is that there are still fortunes to be made by the small investor. Not the least of communities to benefit from this wonderful section has been Bisbee, and the investors of the Warren District are just awakening to its possibilities.

What Experts Say About Oatman

C. H. James, of London, one of the best known Mining Engineers and Geologists in the country, having operated in mining camps of China, South Africa, India and West Australia, etc., after a thorough inspection of this camp, says: "The Oatman, Arizona, mining field will probably in a short while be one of the greatest gold producing sections in the world. After a thorough inspection, I have reached the conclusion that the future of the Oatman Camp is greater than any other mining camp in America."

Another prominent Colorado Engineer, in an interview appearing in the Evening Herald, says: "The United Eastern Mine at Oatman, has a great tonnage of gold ore in sight, and I believe it to be the greatest mine in existence today. After spending 20 years at Cripple Creek, I believe this section is the most promising in North America at the present time. It is my opinion that this district is equal to the Rand of South Africa."

R. L. Rogers, Vice President of the National Bank of California, says: "This flourishing camp undoubtedly holds the spot-light in the center of the mining stage and it looks as if it would continue to do so for a long time to come. Each trip I make to this section, I become more impressed with its wonderful outlook and so rapidly is development being carried on in every direction, that possibilities of today might easily be certainties tomorrow. Several are certainties already, however, as the Tom Reed, the Gold Roads, and United Eastern owners can testify, while many other wonderful prospects are being opened up and should develop with depth into dividend paying mines for years to come."

FIVE GOOD REASONS WHY YOU SHOULD BE A UNITED EASTERN EXTENSION STOCKHOLDER, NOW.

- 1—Because—Look at our location. Best in the entire district.
- 2—Because stock should advance rapidly.
- 3—Because property is to be explored at once, our Engineer has selected our main working shaft and location.
- 4—Because the boom is on stock, and bound to make big advance.
- 5—Because it should make you big money from your investment.

W. Weston, E.M., Member Institute of Mining and Metallurgy of London, says: "The Oatman District is absolutely in a class by itself as a gold mining district." He adds that there is an unlimited amount of gold at a great depth.

STUDY THE MAP.

United Eastern Extension Mining Co.

Capital Stock \$250,000 (1,000,000 shares par value 25c), owns the Yellow Lender and Buster Claims, which are located right along side the Tom Reed Mine and within a few hundred feet of the United Eastern property, gives promises of being a bonanza second to none. The ground floor offering of stock is without a doubt the best buy in the country. Look at the map our neighbors are producing millions. We expect with development the mine to become one of the bonanzas of the camp.

Report on the Property by an Expert

W. H. Adams, a mining engineer, made a report upon the United Eastern Extension Company's property. I will quote a few extracts from his report. He says: "The Buster Mining Claim has a shaft 60 ft. and some drifting has been done from the shaft. The shaft shows some ore, the same in character to that of the Tom Reed Mine the adjoining property. Out of this 60 ft. shaft values as high as \$14.00 have been received from samples taken. The general formation of this ground is altered andesite porphyry. Mr. Skidmore, an old pioneer of this camp, informs me that in the Tom Reed Mine they have run a cross cut into the foot side of their ledge towards the Buster ground and encountered 2 ft. \$800.00."

Ground Floor Proposition. Stock 25c.

Now is the time to buy stock in the United Eastern Extension Mining Company at 25c a share, as only a small allotment will be sold at that price, the next price will be 30c a share.

This is unquestionably the best buy not only in the district but in the entire country. The Tom Reed and the United Eastern both have made millions for wise investors. Tom Reed has paid over \$2.00 per share in dividends and is now selling at \$2.50. United Eastern was offered in Bisbee at 25c a share and is now selling at \$6.00 and the ones in the "knowing" predict it will go up to \$10.00 before spring. All of which proves conclusively that the United Eastern Extension is the best investment of the day. Your profits should be

Large, Quick and Sure

I expect the United Eastern Extension stock will be selling for several dollars a share when the rich ore body is tapped. Let me have your order now while you can secure it at 25c a share. Call or write and make your reservation. I am having some maps printed for free distribution, call and secure one.

B. X. DAWSON, Buy from your broker
Room 52, Copper Queen Hotel, Levy Brothers.
Bisbee, Ariz., L. J. Overlock.
Agents Wanted. Collins & Bretherton.

SUBSCRIPTION BLANK.

NOV. 1915.

B. X. DAWSON, Selling Agent,
United Eastern Extension Mining Co.
Dear Sir:—
Enclosed find \$..... for which send me
..... shares of United Eastern Extension Mining Co.'s non-assess-
able stock at 25c per share. It is understood certificate to be issued soon
as possible.
Name
P. O.
State

YOUR LUNGS



ARE THEY WEAK OR PAINFUL? Do your lungs ever bleed? Do you have night sweats? Have you pains in chest and sides? Do you spit yellow and black matter? Do you continually hawk and cough? Do you have pains under your shoulder blades? These are the symptoms of LUNG TROUBLE

Yet should take immediate steps to check the progress of these symptoms. The sooner you allow them to advance and develop, the more deep seated and serious your condition becomes. We stand ready to prove to you that Lung Trouble is a curable disease. The German Treatment has cured completely and permanently cases after cases of consumption (Tuberculosis), Chronic Bronchitis, Catarrh of the Lungs, Catarrh of the Bronchial Tubes and other lung troubles. Many sufferers who had lost all hope and who had been given up by physicians have been permanently cured by Lung German. If your lungs are only weak and feeble, you can prevent its development, you can build up your lungs and system to the point of perfect strength and elasticity, and the patients remain strong and in splendid health today.

Let us send you the Proof—Proof that will convince any Judge or Jury on Earth. We will gladly send you the proof of many remarkable cures, also a 121½ page book of "Lung German," together with our new 32 page book (in color) on the treatment and cure of various symptoms and lung trouble. If you will send your name and 10 cents (stamp or silver) to help cover expense.

INSPIRATION WORK STILL PROSECUTED

Return Water Pump House Now in Course of Construction By Steel Workers.

MIAMI, Nov. 6.—The return water pump house at the Inspiration mine is rapidly nearing completion. The work is being done on contract by the Kansas City Structural Steel Company and it is expected the structural work will be finished this week. This building is 50x25 feet.

The same company has the contract for the tailings tanks and the concentrate train sheds. With the completion of the pump house the structural ironworkers will commence work on the tailings tanks, of which there will be seven. Three of the tanks will be one hundred feet in diameter, three will be eighty feet in diameter and one will be sixty feet in diameter. Each of the seven will be ten feet deep.

The last of the three jobs will be the construction of the concentrate train shed, which will be 350 feet in length and wide enough to cover one train.

It will take about three months to do the three jobs.

German steel output during September, according to Overseas News Agency, was 1,174,350 tons, as against 1,158,702 tons in August. Daily output was 45,167 tons in September as against 44,566 tons in August.

Lung German Co., 605 Rae Bldg., Jackson, Mich.